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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,655	03/24/2004	Neal A. Rakow	57968US004	3903
32692 7590 09/24/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER AKRAM, IMRAN	
			ART UNIT 1743	PAPER NUMBER
			NOTIFICATION DATE 09/24/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/807,655

Applicant(s)

RAKOW ET AL.

Examiner

Imran Akram

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-10, 17-19, 23-29, 32, 34, 35, 41-43, 45 and 46 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 11-16, 20-22, 30, 31, 33, 44 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/4/04, 11/25/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 6/29/07 is acknowledged.

Specification

1. The disclosure is objected to because of the following informalities: The word colorimetric is repeatedly misplaced by the word calorimetric in the specification and in the claims. Examiner believes the word colorimetric is meant in every instance.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claim 1-3, 7-10, 17-19, 23-28, 32, 34, 41, 42, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drewes (US 7,153,651 B1) in view of Bogart (US 5,869,272).
6. Regarding claims 1-3, 7-9, 41, and, 42 Drewes discloses a colorimetric sensor for measuring one or both of the presence and concentration of an analyte, said colorimetric sensor comprising: a substantially continuous reflective layer (the base layer of column 13, lines 16-29); a detection layer over the reflective layer (the AR layer of column 13, lines 53-62), said detection layer being capable of a change in optical thickness upon exposure to said analyte (column 14, lines 39-47); and a semi-reflective layer over the detection layer, the semi-reflective layer having an index of refraction different from the index of refraction of the detection layer (see attachment layer of column 15, lines 42-67), wherein at least a portion of the semi-reflective layer is permeable to said analyte (see claim 1). Examiner makes an argument of inherency for

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reflective, semi-reflective, and refractive index properties for the different embodiments of reference invention. Drewes does not disclose the material of the detection layer to be a polymer, however.

7. Bogart discloses an attachment layer being capable of change in optical thickness consisting of polymers (column 4, lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a polymer for the detection layer since many different polymers are known to perform the same function as the metals Drewes uses. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

8. Regarding claim 10, Drewes discloses a masking layer (see receptive layer of claim 1) over the attachment layer.

9. Regarding claims 17 and 18, Drewes discloses the detection layer to be porous (column 11, lines 3-19) and of material having microporosity (column 10, lines 60-61).

10. Regarding claim 19, Drewes disclose the use of multiple detection materials, but not polymers. Bogart discloses the use of multiple polymers (column 4, lines 1-3).

Inherent to different compounds is different reactions with different analytes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use more than one detection material for more than one analyte. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

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11. Regarding claim 23, Drewes discloses a permeable reflective layer (column 12, lines 48-52).

12. Regarding claim 24 and 25, Drewes discloses a sensor that is gold when free of analyte and becomes blue when exposed (column 14, lines 39-47).

13. Regarding claims 26-28, while Drewes discloses embodiments wherein biomolecules are included in the receptive layer (column 9, line 37), the reference also discloses embodiments where no biomolecules are mentioned.

14. Regarding claim 32, Drewes does not disclose a housing for the colorimetric sensor. Bogart does, however, disclose a housing at least partially enclosing the colorimetric sensor, wherein the housing comprises at least one opening positioned above the semi-reflective layer, said at least one opening providing a restricted view of an upper surface of the semi-reflective layer (see figure 8E). It would have been obvious to one having ordinary skill in the art at the time the invention was made to enclose the sensor in the device of Bogart for concealing the upper surface of the top layer. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

15. Regarding claim 34, Drewes discloses the use of light with the sensor. Obviously, this is from a light source.

16. Regarding claim 45, Drewes disclose the use of an inorganic detection layer (the AR layer of column 13, lines 53-62) and Bogart discloses the use of multiple polymers in the detection layer (column 4, lines 1-3). It would have been obvious to one having

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ordinary skill in the art at the time the invention was made to include some combination of these layers for the various analytes the materials would be appropriate for testing. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

17. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drewes and Bogart as applied to claim 1 above, and further in view of Burrell (US 5,124,172).

18. Neither Drewes nor Bogart discloses a pattern of wells beneath a surface of the semi-reflective layer and extending a depth into the detection layer. Burrell, however, discloses a detection layer with wells (see figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include wells in the detection layer because Burrell discloses this feature as a known method to increase surface area for the analytes to be tested. The claim would have been obvious because the technique for improving a particular class of devices was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

19. Claims 29, 43, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drewes and Bogart as applied to claims 1, 41, and 45, respectively, above, and further in view of Eyster (US 2003/0207454).

20. Neither Drewes nor Bogart discloses an array of sensor. However, this is common practice in the art (see Eyster, claim 1). It would have been obvious to one

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having ordinary skill in the art at the time the invention was made to use an array of sensors. The claim would have been obvious because the technique for improving a particular class of devices was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

21. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drewes and Bogart as applied to claim 34 above, and further in view of Stewart (US 4,877,747).

22. Neither Drewes nor Bogart discloses a photodetector. Stewart, however, discloses a photodetector **D** (see figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a photodetector to capture the light that is reflected off the sensor. And while Drewes nor Bogart do not specifically disclose the use of a photodetector, both references disclose the need to read/detect the light reflected. A photodetector is a general class of devices for this purpose.

Allowable Subject Matter

23. Claims 4, 5, 11-16, 20-22, 30, 31, 33, 44, and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: The use of islands or patterns in the semi-reflective layer, differential

permeability and thickness of the various layers on various parts of the respective layers, and arrays sharing layers of the sensors are not known in the prior art. No motivation for combination was found.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Imran Akram whose telephone number is 571-270-3241. The examiner can normally be reached on 8-6 Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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